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ELEMENTS OF HARMONY

A complete study of the material used in Harmony containing explanatory examples and practical exercises; to be used independently or in conjunction with any of the standard treatises on harmony

By
EMIL BARTH

Price 50 Cents

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Dedicated to my esteemed friend

ALOIS F. LEJEAL.

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By

Emil Barth.

The conscientious working out of the following exercises, will result in a thorough knowledge of Intervals, formation and location of chords, etc., indispensable to anyone interested in the study of music.

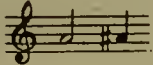
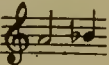
Used in conjunction with any standard treatise on Harmony, these tables will be of great practical help to the student and furnish valuable assistance to the teacher.

An absolute mastery of the subjects herein presented will enable the student to pursue the further study of the different branches of Theory of Music with greater facility and success.

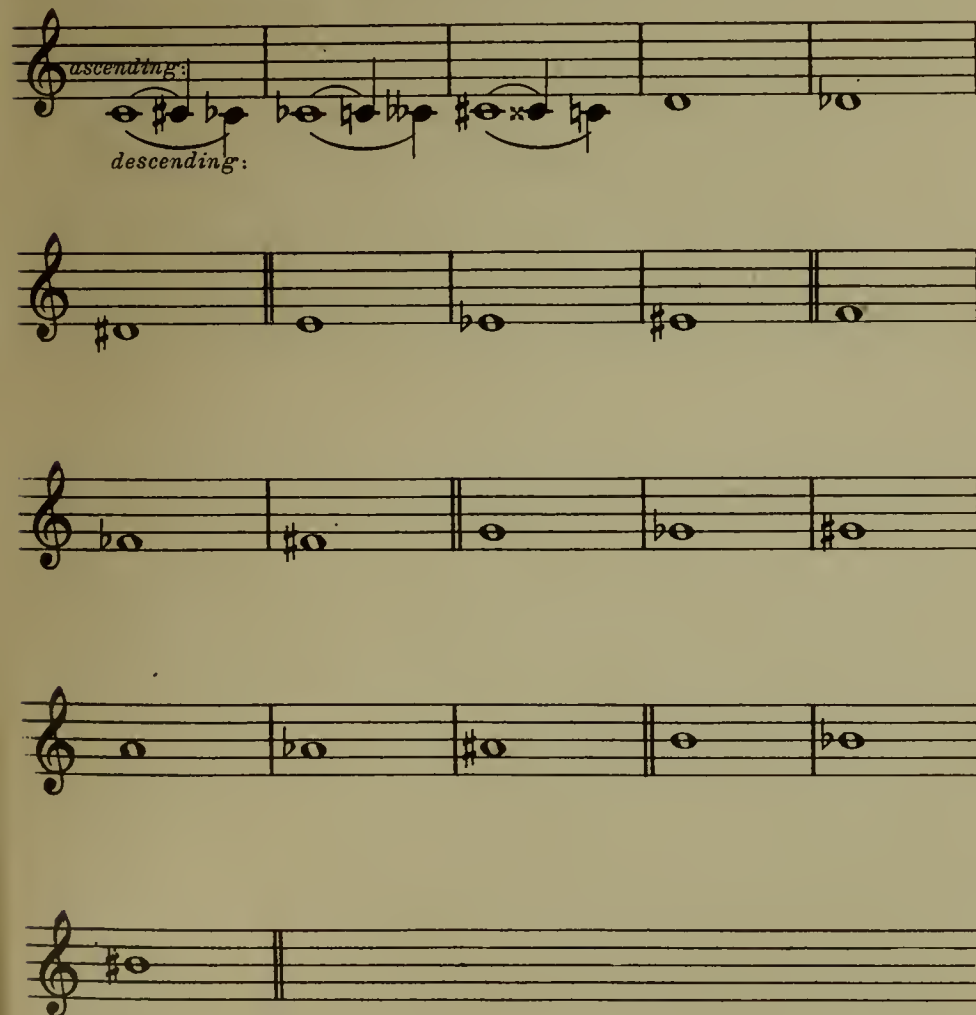
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ELEMENTS OF HARMONY

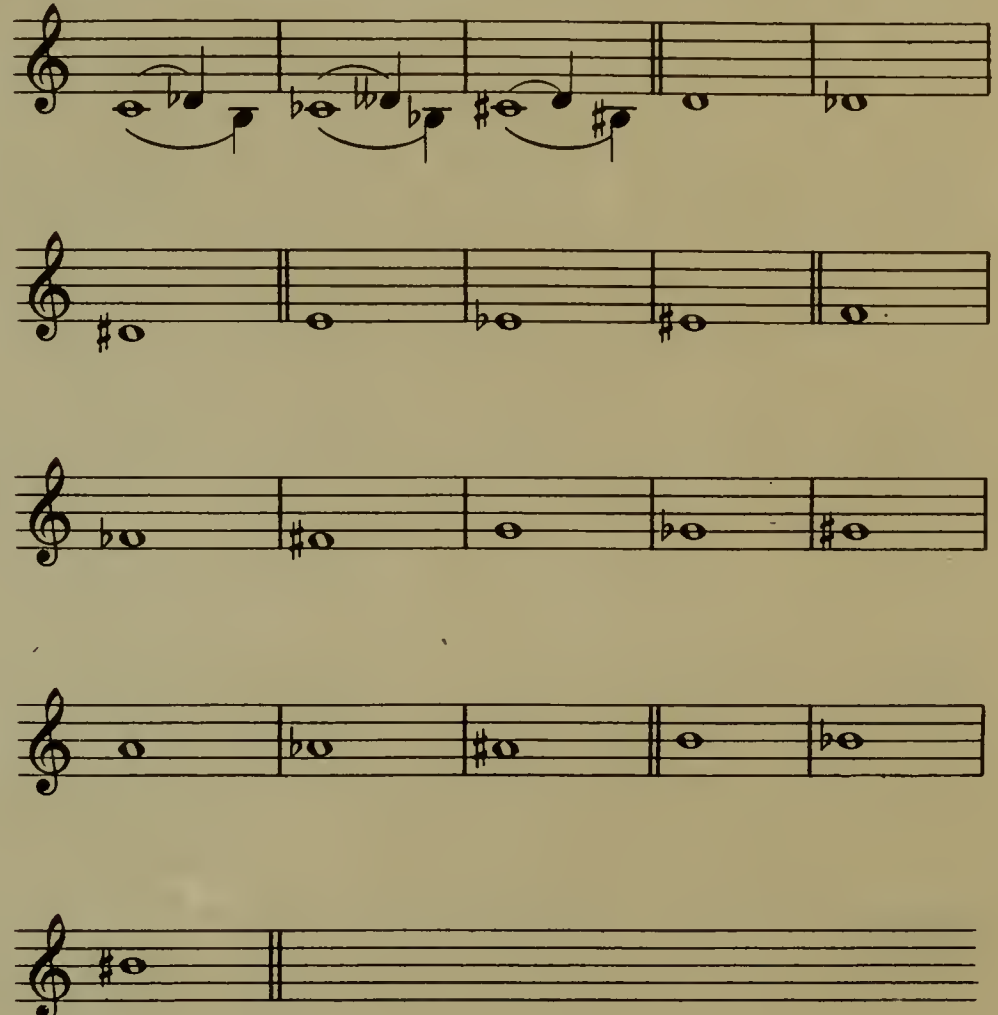
Half-Steps.

A half-step is the smallest distance between two consecutive tones. Proper distinction should be made between a "Half step" formed by a chromatic alteration *on the same degree*: e.g.  and a *half step* formed by a progression to a neighboring degree: e.g. 

Chromatic Halfsteps. Ascending and descending.



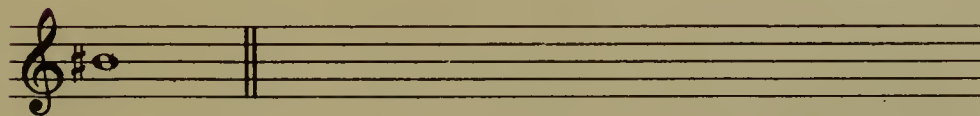
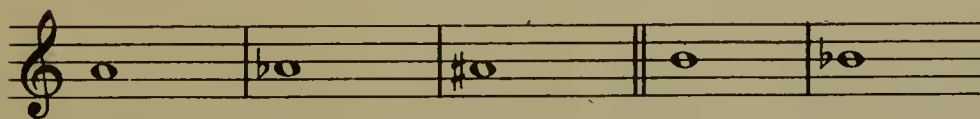
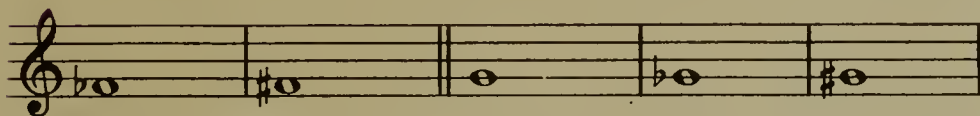
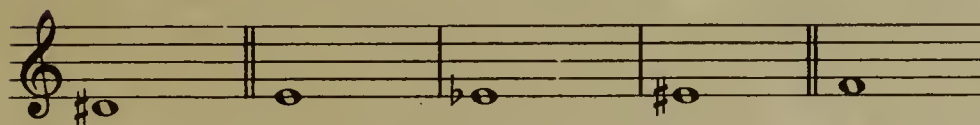
Diatonic Halfsteps. Ascending and descending.



Whole Steps. Ascending and descending.

Scales.

A *Whole Step* comprises a *diatonic* halfstep plus a *chromatic* halfstep.



A. The Major Scale.

A Major Scale consists of eight diatonic degrees; from the third to the fourth and from the seventh to the eighth are *halfsteps*; all others are *wholesteps*.

Remark: Although its signature appears at the head of each scale, it is imperative that the student for analytical reasons write the chromatic alteration before each degree wherever required.

Tonic Super Tonic Mediant Sub Dominant Dominant Sub Mediant Leading Tonic
 1 2 3 4 5 6 7 8
 Step 1/2 Step 1/2

Observe that from „E to F” and from „B to C” are naturally half-tones.

Descending in the same order.

G

D

A

E

B

F#

C#

F

Bb

Eb

Ab

Db

Gb

Cb

b, The Harmonic Minor Scale.

In the Harmonic Minor Scale there are three halfsteps: from the second to the third, from the fifth to the sixth, and seventh to the eighth degrees. The other degrees consist of whole-steps, except from the sixth to the seventh which consists of a whole-step and a chromatic half-step.

a

Descending in the same order.

1 2 3 4 5 6 7 8

e

b

f#

c#

g#

d#

a#

d

e

c

f

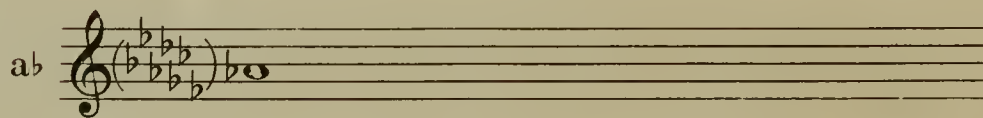
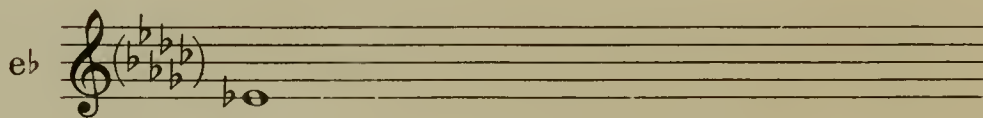
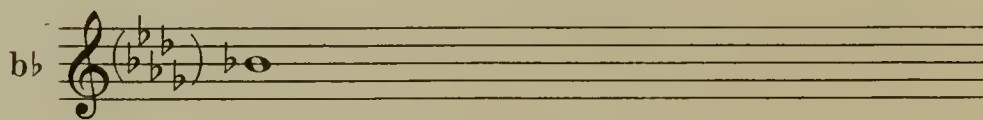
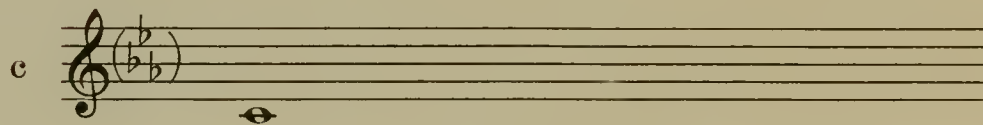
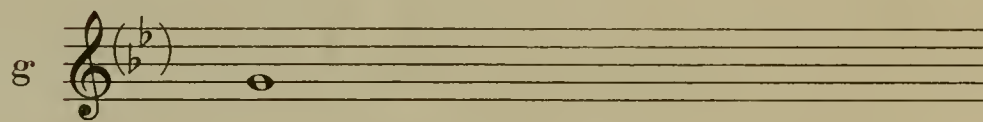
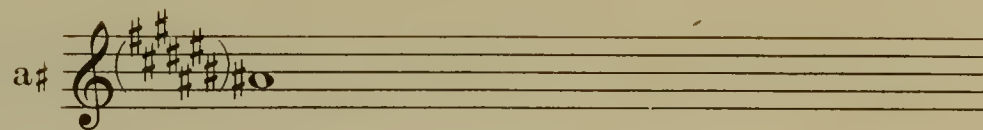
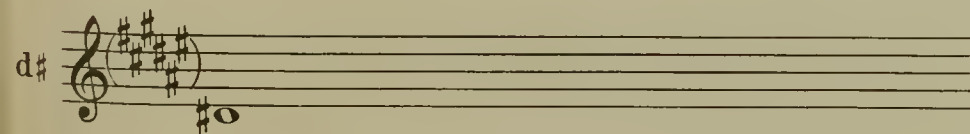
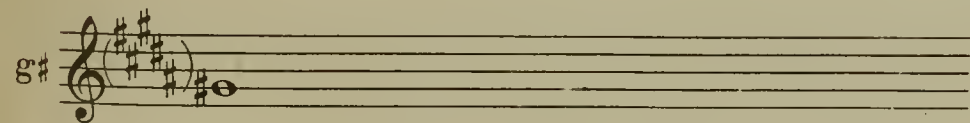
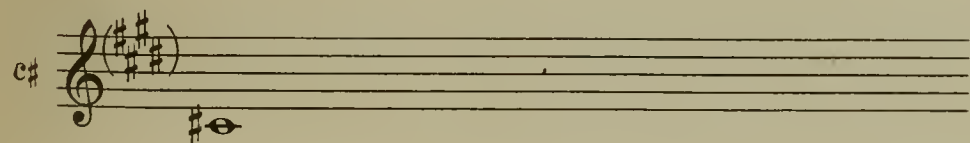
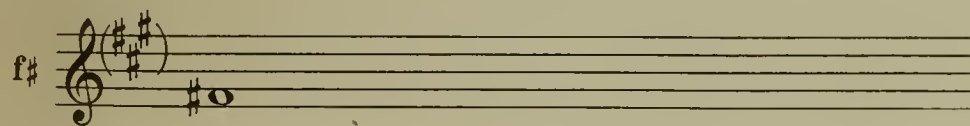
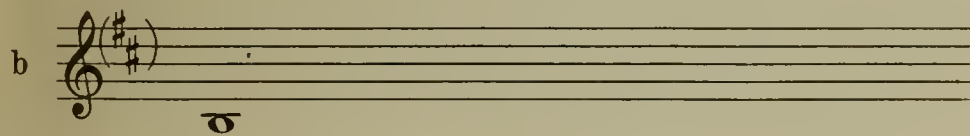
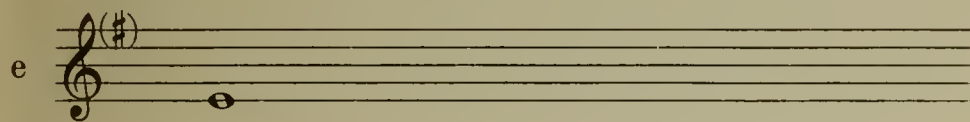
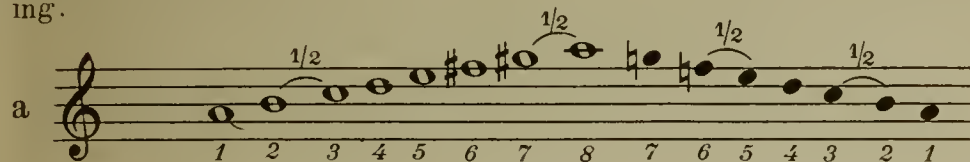
b

eb

ab

c, The Melodic Minor Scale. (ascending and descending)

In the Melodic Minor Scale the halfsteps occur from the second to the third, and seventh to the eighth degrees ascending, and from the sixth to the fifth and third to the second degrees descending.



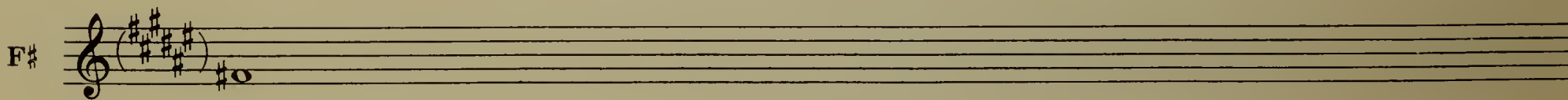
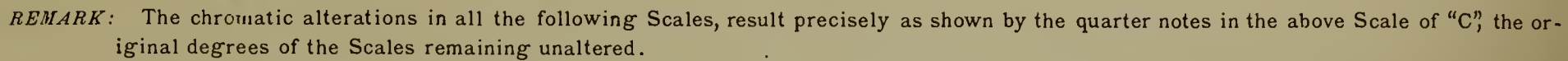


Diagram illustrating the chromatic scale for the C major scale, showing the notes and their corresponding chromatic alterations (sharps and flats) for each interval.

The notes and their chromatic alterations are:

- C# (C major scale, sharp)
- F (F major scale, flat)
- Bb (B major scale, flat)
- Eb (E major scale, flat)
- Ab (A major scale, flat)
- Db (D major scale, flat)
- Gb (G major scale, flat)
- Cb (C major scale, flat)

Intervals

Interval is the term used to designate the relation of two tones of different pitch, as well as the distance from one tone to another. Intervals are always counted from the lowest tone upward. The lowest tone (fundamental) of a Major Scale is called the *Prime*. The next tone above it the *Second*; and all succeeding intervals are named according to the degree upon which they occur. The *Prime, Fourth, Fifth* and *Octave* of the Major Scale are called *Perfect Intervals*; the *Second, Third, Sixth* and *Seventh* are called *Major Intervals*. Intervals are changed by chromatically raising or lowering one or both of their tones. Chromatically raising the upper tone or lowering the lower tone of *Perfect* and *Major* Intervals results in *Augmented* Intervals. Chromatically lowering the upper tone or raising the lower tone of *Major* Intervals results in *Minor Intervals*. Chromatically lowering the upper or raising the lower tone of *Perfect* and *Minor* Intervals results in *Diminished Intervals*.

Perfect Intervals: PRIME (Unison), FOURTH, FIFTH, OCTAVE

Major Intervals: SECOND, THIRD, SIXTH, SEVENTH, NINTH

Minor Intervals: SECOND, THIRD, SIXTH, SEVENTH, NINTH

Augmented Intervals: PRIME, SECOND, FOURTH, FIFTH, SIXTH (Tritonus), NINTH, OCTAVE

Diminished Intervals: THIRD, FOURTH, FIFTH, SEVENTH, OCTAVE

The following table shows, in regular order, the intervals used in various chord formations.

PRIMES: Perfect, Augm.

SECONDS: Major, Minor, Augm.

THIRDS: Major, Minor, Dimin., Perf., Augm., Dimin.

FOURTHS: Major, Minor, Dimin., Perf., Augm., Dimin.

FIFTHS: Perf., Augm., Dim., Major, Minor, Augm.

SIXTHS: Major, Minor, Augm.

SEVENTHS: Major, Minor, Dim., Perf., Dim., Major, Minor

OCTAVES: Major, Minor, Dim., Perf., Dim., Major, Minor

NINTHS: Major, Minor

REMARK: Diminished *Seconds, Sixths, Ninths*, and augmented *Thirds* and *Sevenths* do not occur in Chord formation.

Intervals are classed as Perfect and Imperfect Consonances and Dissonances. Perfect Intervals form Perfect Consonances.

Major and Minor Thirds and Major and Minor Sixths are regarded as Imperfect Consonances.

Augmented Seconds, Diminished Fourths, Augmented Fifths, and Diminished Sevenths, are (as to sound) also to be considered as Imperfect Consonances.

Major and Minor Seconds, Sevenths and Diminished Thirds, Augmented Fourths, Diminished Fifths, Augmented Sixths, and Diminished Octaves, are classed as Dissonances.

(Tables for this work on pages 12 to 15.)

Inversion of Intervals.

When inverted into the lower Octave:

The Perfect Intervals remain Perfect Intervals.

„ Major	„	become Minor	„
„ Minor	„	„ Major	„
„ Diminished	„	„ Augmented	„
„ Augmented	„	„ Diminished	„

as follows:

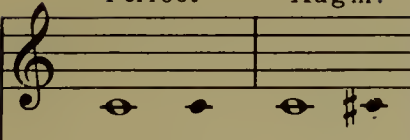
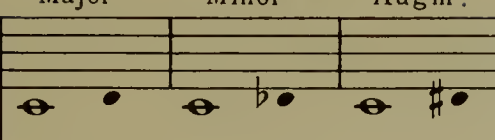
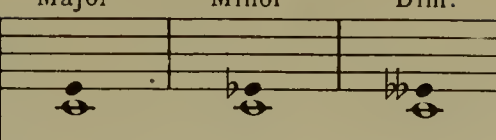
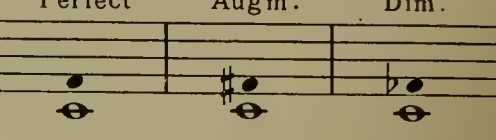
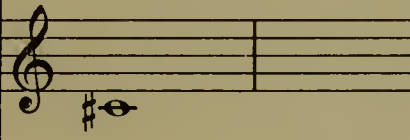
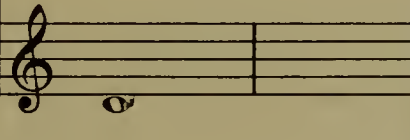
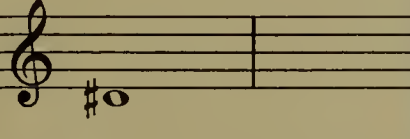
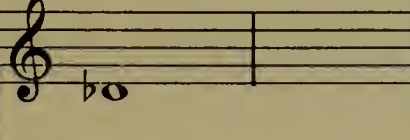
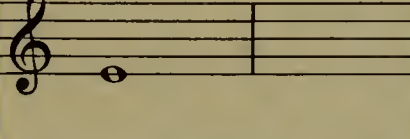
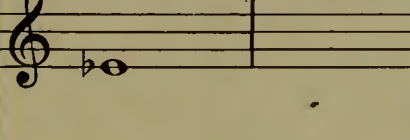
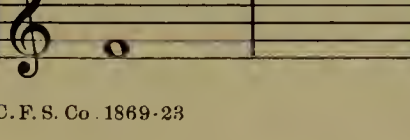
The diagrams illustrate the inversion of intervals between the upper and lower octaves. Each interval is shown on a staff with two notes, and the interval name and quality are written above or below the staff.

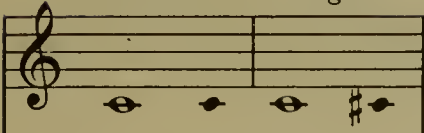
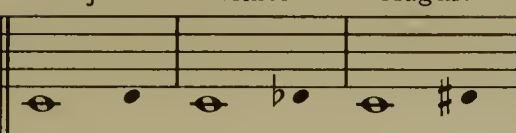
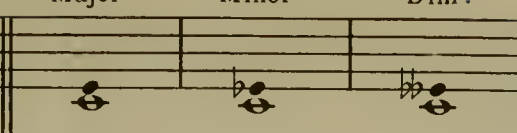
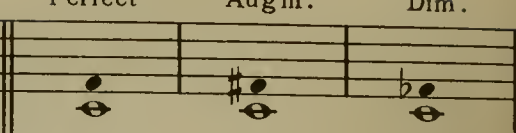
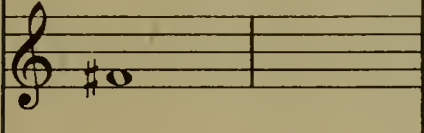
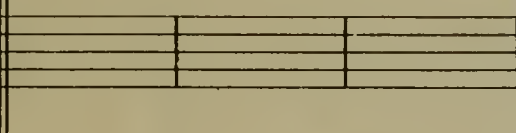
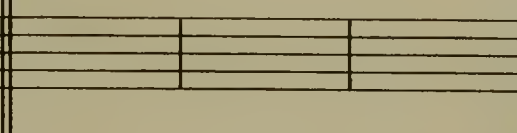
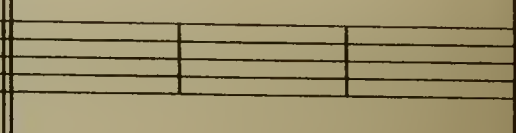
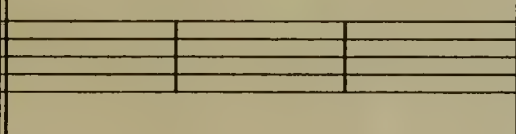
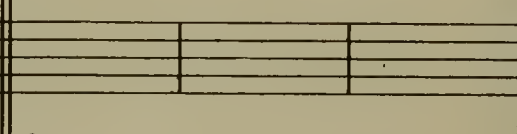
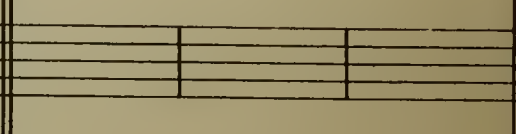
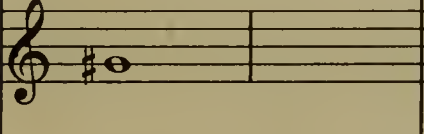
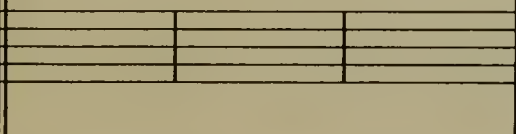
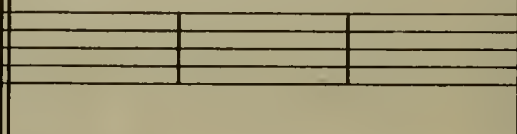
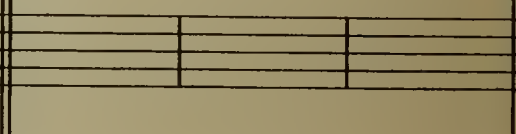
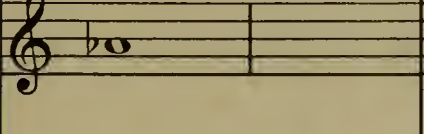
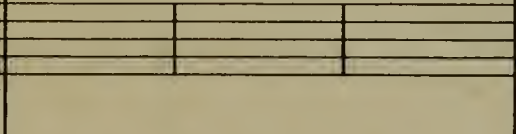
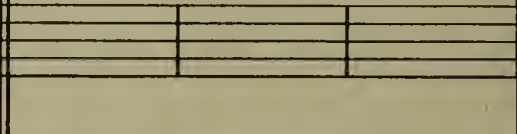
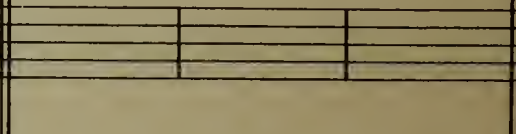
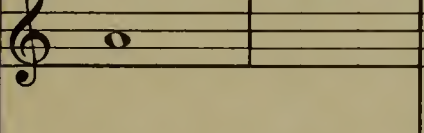
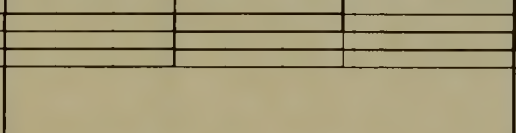
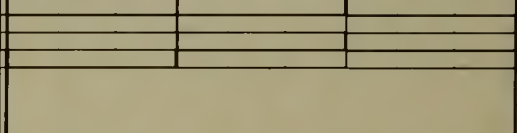
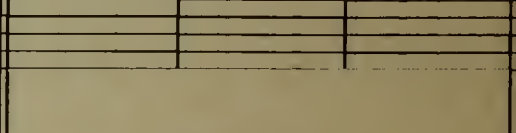
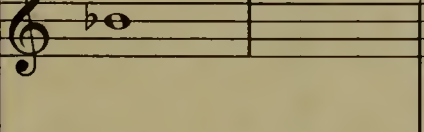
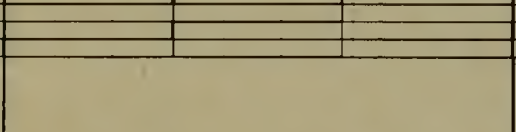
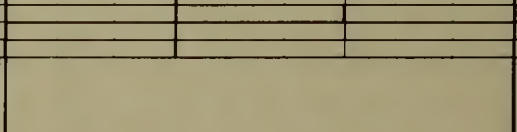
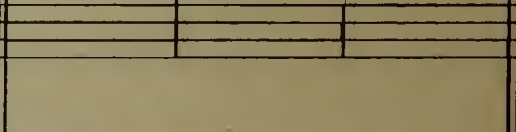
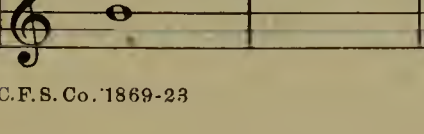
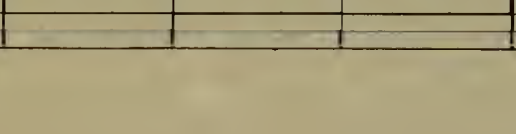
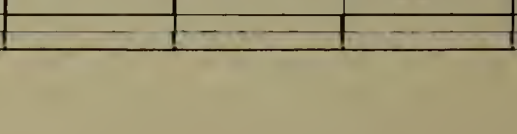
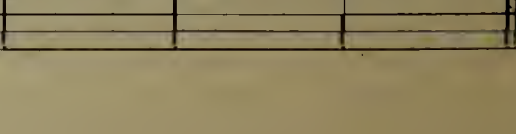
Upper Intervals:

- PRIMES:** Perf., Augm.
- SECONDS:** Major, Minor, Augm.
- THIRDS:** Major, Minor, Dim.
- OCTAVES:** Perf., Dim.
- SEVENTHS:** Minor, Major, Dim.
- SIXTHS:** Minor, Major, Augm.

Lower Intervals:

- FOURTHS:** Perf., Augm., Dim.
- FIFTHS:** Perf., Augm., Dim.
- FIFTHS:** Perf., Dim., Augm.
- FOURTHS:** Perf., Dim., Augm.
- SIXTHS:** Major, Minor, Augm.
- SEVENTHS:** Major, Minor, Dim.
- OCTAVES:** Perf., Dim.
- THIRDS:** Minor, Major, Dim.
- SECONDS:** Minor, Major, Augm.
- PRIMES:** Perf., Augm.

PRIMES		SECONDS			THIRDS			FOURTHS		
Perfect	Augm.	Major	Minor	Augm.	Major	Minor	Dim.	Perfect	Augm.	Dim.
										
										
										
										
										
										
										
										

PRIMES		SECONDS			THIRDS			FOURTHS		
Perfect	Augm.	Major	Minor	Augm.	Major	Minor	Dim.	Perfect	Augm.	Dim.
										
										
										
										
										
										
										
										

Triads.

A combination of three tones, the Fundamental (lowest tone) a Third and a Fifth constitute a TRIAD. e.g.  etc.

Explanatory Signs for Chords.

A roman numeral with bars: (I) indicates: MAJOR
 " " " without " (II) " MINOR.
 " " " " " and a naught (VII^o) indicates: DIMINISHED.
 " " " with " " " slur (III) indicates AUGMENTED.

The Triads of the Major and (*Harmonic*) Minor Scales.

a, The Triads of the Major Scales.

Tonic. Sub-Dominant. Dominant.

C

G

D

A

E

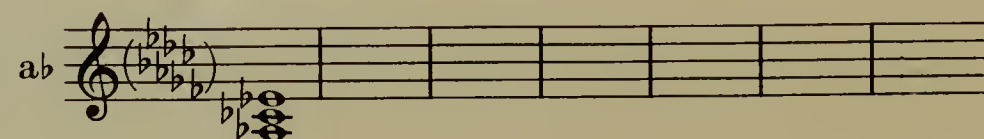
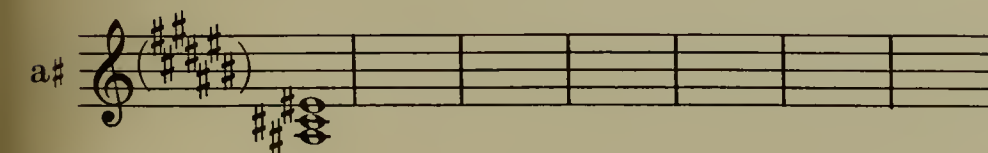
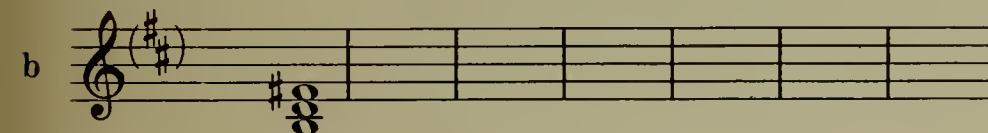
B

I ii iii IV V vi vii°

F#
 C#
 F
 B $\flat$
 E $\flat$
 A $\flat$
 D $\flat$
 G $\flat$
 C $\flat$

b, The Triads of the (*Harmonic*) Minor Scales.

Tonic.

.Sub-
Dominant. Dominant.

Inversions of Triads.

First Inversion. (Chord of the Sixth) where the *Third* of the Triad occurs as lowest tone.

Second Inversion. (Chord of the Fourth-Sixth) where the *Fifth* of the Triad occurs as the lowest tone.

The Chord of the Sixth is indicated by a "6" over the bass note.

The Chord of the Fourth-Sixth is indicated by a " $\frac{6}{4}$ " over the bass note.

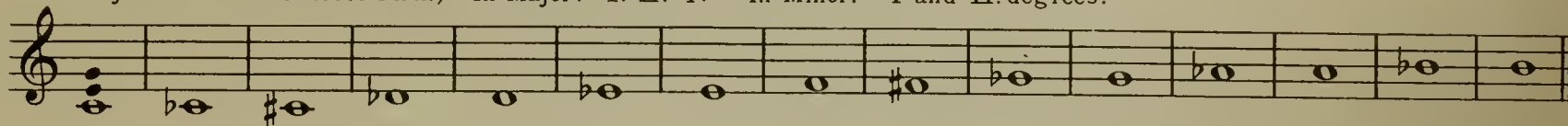
It is evident that by "Inversion" no new chords are formed.

It means simply a changed formation of the same chord, by which any of its tones instead of the fundamental, may be placed in the bass.

The Triads and their Inversions.

(Major Third and Perfect Fifth) In Major: I. IV. V. In Minor: V and VI. degrees.

a. *Major Triads*
Fundamental position



1st Inversion
Chord of the "6"

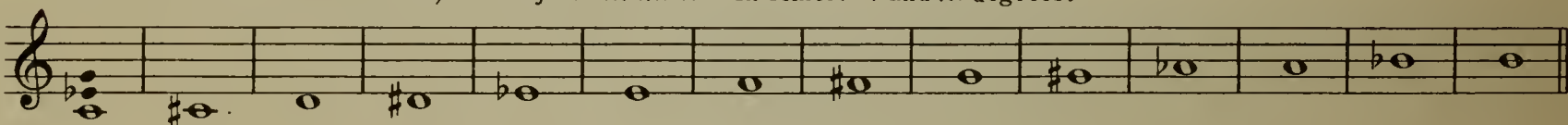


2nd Inversion
Chord of the " $\frac{6}{4}$ "



(Minor Third and Perfect Fifth) In Major: II. III. VI. In Minor: I and IV. degrees.

b. *Minor Triads*
Fundamental position



1st Inversion
Chord of the "6"



2nd Inversion
Chord of the " $\frac{6}{4}$ "



Chords of the Seventh (Sept Chords)

The Chords of the Seventh are founded upon the Triads. They result from the addition of a Third to the Fifth of the Triad, which (Third) forms a Seventh from the Fundamental. The different kinds of Triads as well as the different kinds of Sevenths result in various Chords of the Seventh. In the Fundamental position the Sevenths are indicated:

Major = 7

Minor = 7

Diminished = 7°

Chords of the Seventh of the "C" Major Scale.

C: I⁷ II⁷ III⁷ IV⁷ V⁷ VI⁷ VII⁷

Chords of the Seventh of the "a" (Harm.) Minor Scale.

a: I⁷ II⁷ III⁷ IV⁷ V⁷ VI⁷ VII⁷

The Chord of the Seventh on the fifth degree in both Major and Minor, consisting of a Major Triad and a Minor Seventh (the most important) is called the Chord of the *Dominant Seventh*.

The Chords of the Dominant Seventh *Major Triad with Minor Seventh. (In Major and Minor: V⁷ degree.)*

Fundamental position:

1st Inversion
Chord of the $\frac{6}{5}$ ($\frac{5}{3}$)

2nd Inversion
Chord of the $\frac{4}{3}$ ($\frac{4}{3}$)

3rd Inversion
Chord of the $\frac{2}{2}$ ($\frac{2}{2}$)

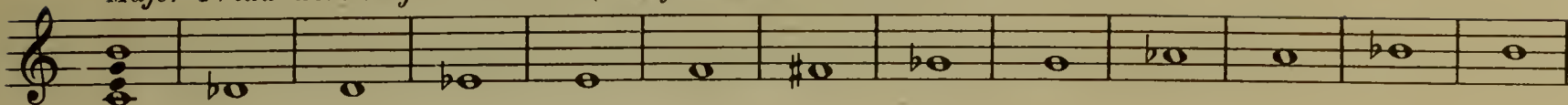
The other Chords of the Seventh.

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commonly called "Secondary" or "Collateral" Chords of the Seventh.

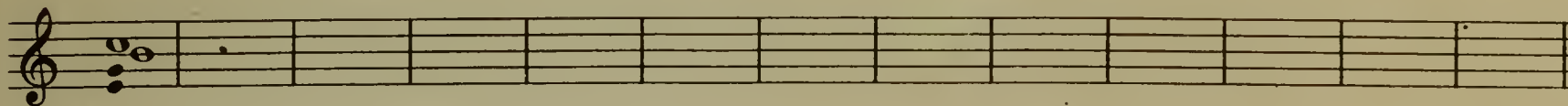
Major Triad with Major Seventh. (In Major: I⁷. IV⁷. In Minor: VII⁷.)

Fundamentalposition.



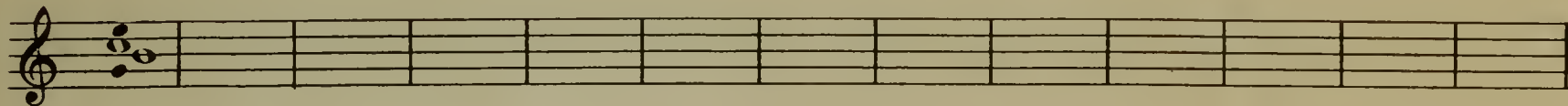
1st Inversion

Chord of the 5 $\begin{pmatrix} 6 \\ 5 \\ 3 \end{pmatrix}$



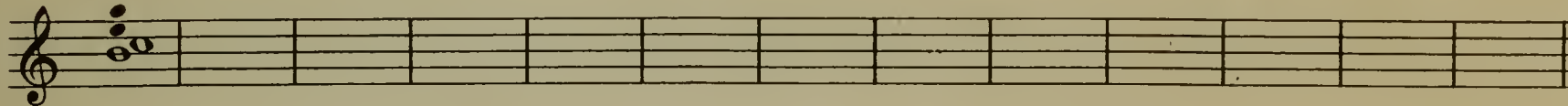
2nd Inversion

Chord of the 3 $\begin{pmatrix} 4 \\ 3 \end{pmatrix}$



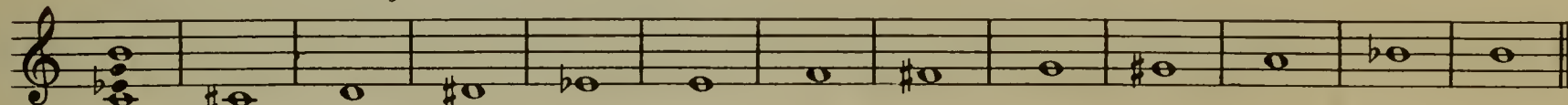
3rd Inversion

Chord of the 2 $\begin{pmatrix} 6 \\ 4 \\ 2 \end{pmatrix}$



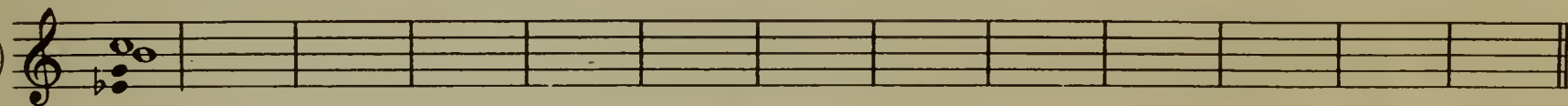
Minor Triad with Major Seventh. (In Minor I⁷)

Fundamentalposition.



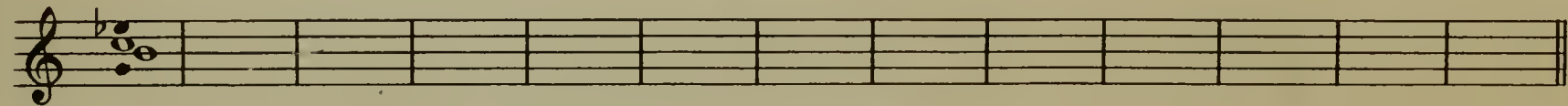
1st Inversion

Chord of the 5 $\begin{pmatrix} 6 \\ 5 \\ 3 \end{pmatrix}$



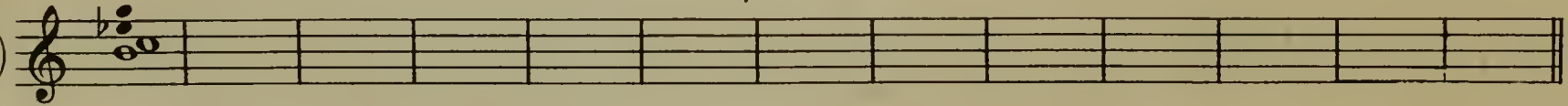
2nd Inversion

Chord of the 3 $\begin{pmatrix} 4 \\ 3 \end{pmatrix}$



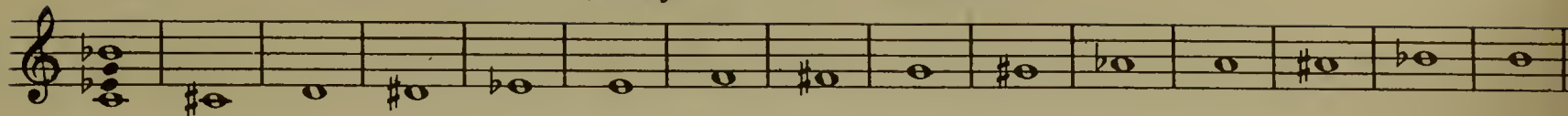
3rd Inversion

Chord of the 2 $\begin{pmatrix} 6 \\ 4 \\ 2 \end{pmatrix}$



Minor Triad with Minor Seventh. (In Major: II⁷. III⁷. VI⁷. In Minor: IV⁷)

Fundamentalposition.



1st Inversion

Chord of the $\begin{smallmatrix} 6 \\ 5 \end{smallmatrix} \begin{pmatrix} 6 \\ 5 \\ 3 \end{pmatrix}$



2nd Inversion

2nd Inversion $\begin{pmatrix} 6 \\ 4 \\ 3 \end{pmatrix}$
Chord of the $\frac{4}{3}$



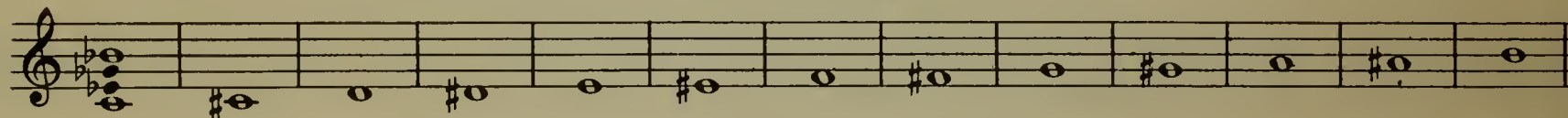
3rd Inversion

rd Inversion $\begin{pmatrix} 6 \\ 4 \\ 2 \end{pmatrix}$
Chord of the 2



Diminished Triad with Minor Seventh. (*In Major: VII^{o7} In Minor: II^{o7}*)

Fundamentalposition.



1st Inversion

Chord of the $\frac{6}{5}$ $\begin{pmatrix} 6 \\ 5 \\ 3 \end{pmatrix}$



2nd Inversion

Chord of the $\frac{4}{3}\left(\frac{6}{3}\right)$



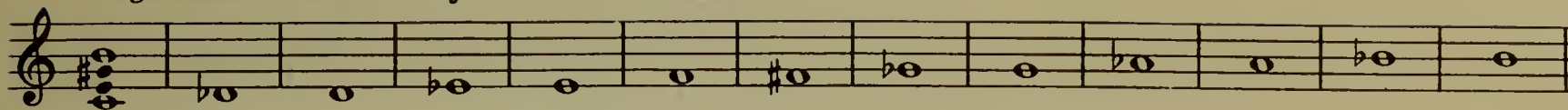
3rd Inversion

Chord of the 2 $\begin{pmatrix} 6 \\ 4 \\ 2 \end{pmatrix}$



Augmented Triad with Major Seventh (In Minor III^7)

Fundamental position.



1st Inversion.

Chord of the $\frac{6}{5}$ $\left(\frac{5}{3}\right)$



2nd Inversion.

Chord of the $\frac{4}{3}$ $\left(\frac{4}{3}\right)$



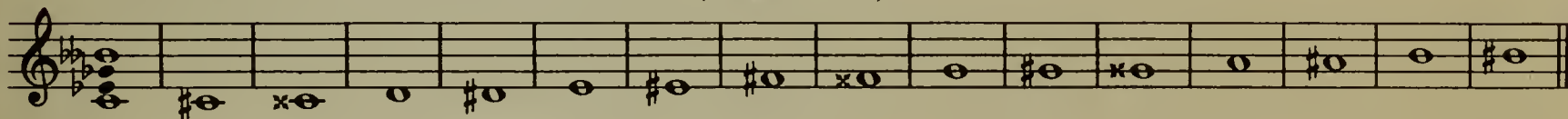
3rd Inversion.

Chord of the $\frac{6}{2}$ $\left(\frac{4}{2}\right)$



Diminished Triad with Diminished Seventh (In Minor $\text{VII}^{\circ 7}$)

Fundamental position.



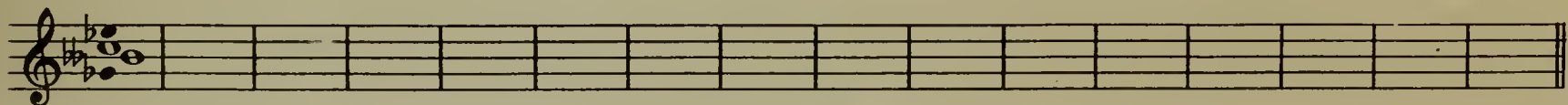
1st Inversion.

Chord of the $\frac{6}{5}$ $\left(\frac{5}{3}\right)$



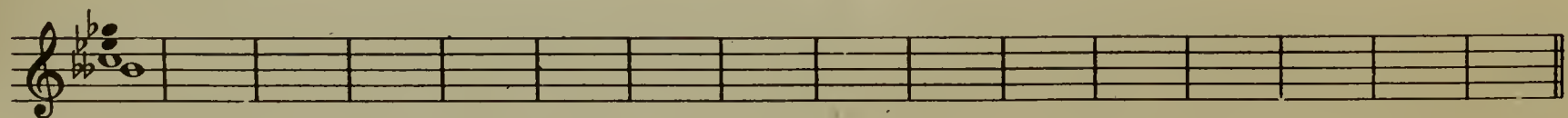
2nd Inversion.

Chord of the $\frac{4}{3}$ $\left(\frac{4}{3}\right)$



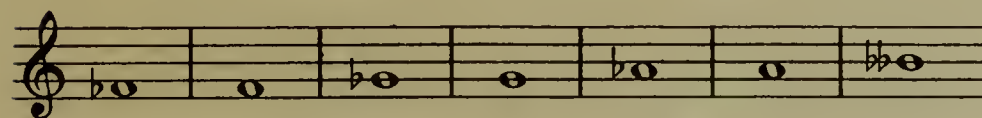
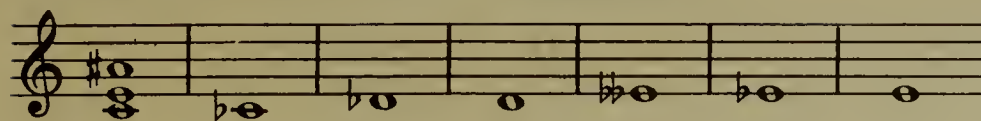
3rd Inversion.

Chord of the $\frac{6}{2}$ $\left(\frac{4}{2}\right)$



Altered Chords

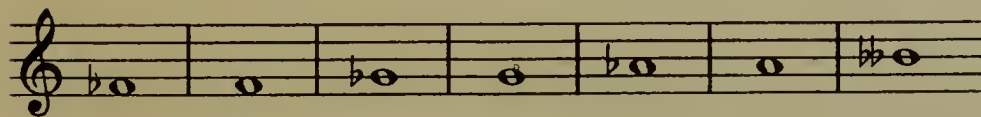
The augmented Sixth Chord (Major Third and augmented Sixth.)



An *Augmented Sixth Chord* may be formed:
a, by raising the 6th of the 1st inversion of a Minor Triad a chromatic halfstep;

b, by lowering the basstone of the 1st inversion of a Diminished Triad a chromatic halfstep.

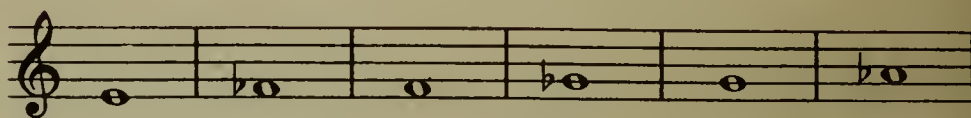
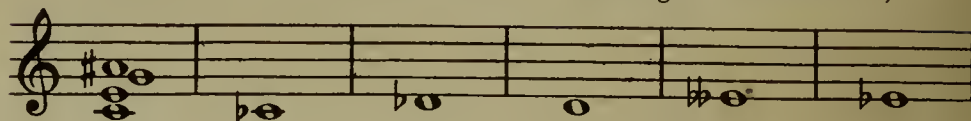
The augmented Third-Fourth-Sixth Chord. (Major Third augmented Fourth and augmented Sixth.)



An *Augmented Third-Fourth-Sixth Chord* may be formed: *a*, by raising the 6th of the 2d inversion of Septchord: Diminished Triad with Minor Seventh a chromatic halfstep.

b, by lowering the basstone of the 2d inversion of a Dominant Septchord a chromatic halfstep.

The augmented Fifth-Sixth Chord. (Major Third Perfect Fifth and augmented Sixth.)



An *augmented Fifth-Sixth Chord* may be formed:
a, by raising the 6th of the 1st inversion of Septchord: Minor Triad with Minor Seventh a chromatic halfstep.

b, by lowering the basstone of the 1st inversion of a Diminished Septchord a chromatic halfstep.

"Chords of the Ninth" of the Major and Minor Scales.

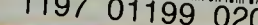
Chord of the "Ninth" can only be regarded as *accidental chord formations*. The only one of any consideration being the Chord of the *Dominant Ninth*, produced by the addition of a "Third" to the Dominant Septchord of the Major or Minor Scale.

e. g. In Major. The Major Ninth.

In Minor. The Minor Ninth.



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